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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/621,651	07/21/2000	Naoki Nishi	`P00,1021	4631

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EXAMINER	
TILLERY, RASHAWN N	
ART UNIT	**PAPER NUMBER**
2612	9

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/621,651	NISHI, NAOKI	
	Examiner	Art Unit	
	Rashawn N Tillery	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Response to Arguments

Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukusho (US5401679).

Regarding claim 1, Fukusho discloses, in figure 15c, a charge transfer device comprising:

a transfer channel (1); and

plural pairs of two-layered transfer electrodes (5, 10) arranged along a transfer direction of the transfer channel, wherein two-phase driving pulses are applied to the plural pairs of two-layered transfer electrodes (see col. 10, lines 32-35; Fukusho

teaches charge packets are transferred in a transfer direction from left to right; and in the Background of the Invention, with regard to conventional devices used in present invention, signal charge packets are transferred in one direction when two-phase drive pulses are applied), and the transfer channel below a paired two-layered transfer electrode disposed at the last portion in the transfer direction has a first area (11a), a second area (11b) which is provided downstream of the first area in the transfer direction and has a deeper potential level than the first area, and a third area (11ca) which is provided at the downstream of the second area in the transfer direction and has a deeper potential level than the second area and wherein the first area, the second area and the third area are each located directly beneath a final group of two-layered transfer electrodes.

The examiner notes that Applicant's claim language does not require that the 3 areas occur only at the final pair of electrodes.

Regarding claim 2, Fukusho discloses, in figure 11c, transfer electrodes which are independently provided directly above the first area, the second area and the third area (Applicant's claim language does not require that a single transfer electrode be provided directly above respective first, second and third areas).

Regarding claim 3, Fukusho discloses common driving pulses are applied to the independently provided transfer electrodes. The examiner notes that Fukusho's driving pulses are "common" in that they are all driving pulses. Applicant is not claiming that the driving pulses have the same amplitude.

Regarding claim 4, Fukusho discloses commonly provided transfer electrodes are provided above the second and third area. The examiner notes that transfer electrodes are "commonly provided" since they are all arranged on a transfer channel; and the transfer electrodes are also provided "above" the second and third areas.

Regarding claim 5, see examiner's notes in claim 4.

Regarding claim 7, Fukusho discloses, in figure 12c, a charge transfer device comprising:

an image pickup portion (inherent feature) which contains plural photosensors and converts input light to electrical signals by the plural photosensors;

a transfer channel (1) for transferring the charges thus photoelectrically converted in the image pickup portion; and

plural pairs of two-layered transfer electrodes (5, 10) arranged along a transfer direction of the transfer channel, wherein two-phase driving pulses are applied to the plural pairs of two-layered transfer electrodes (see col. 10, lines 32-35; Fukusho teaches charge packets are transferred in a transfer direction from left to right; and in the Background of the Invention, with regard to conventional devices used in present invention, signal charge packets are transferred in one direction when two-phase drive pulses are applied), and the transfer channel below a paired two-layered transfer electrode disposed at the last portion in the transfer direction has a first area (11a), a second area (11b) which is provided downstream of the first area in the transfer direction and has a deeper potential level than the first area, and a third area (11ca) which is provided downstream of the second area in the transfer direction and has a

deeper potential level than the second area and wherein the first area, the second area and the third area are each located directly beneath a final group of two-layered transfer electrodes.

The examiner notes that Applicant's claim language does not require that the 3 areas occur only at the final pair of electrodes.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukusho in view of Hirota (US5239192).

Regarding claim 6, Fukusho discloses a charge transfer device. Fukusho does not expressly disclose the transfer channel has at the last portion in the transfer direction an area which is gradually tapered off at the downstream side.

Hirota discloses, in figure 3, a horizontal charge transfer register with a tapered output section. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fukusho's device by implementing Hirota's teachings since Hirota is capable of increasing charge transfer time as well as charge transfer efficiency by way of the tapered output.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rashawn N Tillery whose telephone number is 703-305-0627. The examiner can normally be reached on 9AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RNT

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